

INTRODUCTION

This report was prepared by the Office of Vital Statistics (OVS) of the Montana Department of Public Health and Human Services (DPHHS). The following organizations also provided information: The Montana Central Tumor Registry (MCTR) of DPHHS, the Montana Communicable Disease Program, also of DPHHS, and the Census and Economic Information Center of the Montana Department of Commerce. The report provides a reference to some of the more frequently used Montana vital and health statistics. Because it is intended primarily for reference, there is limited analysis and interpretation of the data. This Report, and several additional tabulations, are available on the Montana Vital Statistics website: http://www.dphhs.state.mt.us/divisions/otd/vital/statistical_tables.htm. More detailed tabulations and analyses are available on request, as time and other resources permit.

A general discussion of the findings, with descriptive figures, appears on pages 38 through 87. Vital statistics reference tables for 2000 appear on pages 00-1 through 00-70. Where space permits, data for one or more prior years are provided for comparison. **Tables 1, 3, 4, 21, 26, and 27** provide frequencies and statistics on selected vital events. **Table 2** shows Montana's resident population by county according to the 1980, 1990, and 2000 Censuses. **Tables 5 through 8** present data on natality (births). Mortality (death) data are presented in **Tables 9 through 15**. **Tables 16 through 19** provide data on induced abortions. Marriages are covered in **Tables 20 and 22 through 25**. **Tables 28 through 30** contain summaries of the incidence of communicable diseases. **Tables 31 through 33** provide information on the incidence of cancer.

Records collected by the OVS provide the majority of data for these statistics and tabulations. These records include certificates of birth, death, and fetal death and transcripts of information on marriage, marital termination, and legally induced abortions. Any other source of data--such as the U.S. Bureau of the Census, the Montana Central Tumor Registry, or the Communicable Disease Program of DPHHS--is cited in the text or table where the data are used.

VITAL REGISTRATION AND DATA COLLECTION

Registration of births, deaths, and fetal deaths is a legal requirement. Birth certificates must be filed with the local registrar within ten days of the event. The attending physician, midwife, or parent must file the certificate in the county in which the birth occurred. Most births occurring in Montana are registered electronically. The person responsible for filing death or fetal death certificates is the funeral director or other person in charge of disposition of the body. The certificate must be filed with the county's local registrar no later than ten days after the date the death is discovered. A fetal death certificate must be filed when the fetus weighed 350 grams or more or, if the weight is unknown, the period of gestation was determined to be 20 weeks or more.

Montana vital statistics law makes marriage and marital termination reportable events. Before the tenth day of each month, the clerk of district court must report all marriages that have occurred, been dissolved, or been invalidated in the county during the preceding month. The Abortion Control Act makes any induced abortion occurring in Montana a reportable event. Facilities performing induced abortions are responsible for reporting within 30 days.

The original certificates of birth, death, and fetal death, and reports of induced abortion, marriage, and divorce, are forwarded to the Office of Vital Statistics. Birth, death and fetal death certificates are permanently filed with and maintained by the OVS. The office maintains electronic records of all events in Montana's Vital Statistics System.

OVS staff checks all records and reports for accuracy and completeness and codes them for data entry. Those data that are not received electronically are key-entered and maintained in electronic files. Vital records files contain the legal portions of the certificates and reports. Vital statistics files contain statistical information without identification of individuals.

The OVS designs vital certificate and report forms to meet all legal registration and reporting requirements and to provide statistical data to federal, state, and county government agencies, modifying these forms as information requirements change. The following statistical data on these vital events are available for analysis:

NATALITY (1989-2000)

- Date, hour, and place of birth.
- Age, race, ancestry, education, and birthplace of the parents; place of residence and marital status of the mother.
- Pregnancy history, including number of prior pregnancies, date and results of last prior pregnancy; date of last normal menses; month in which prenatal care began; number of prenatal visits; maternal risk factors during the pregnancy; medical conditions, tobacco and alcohol use, and weight gain.
- Birth process (including whether the mother was transferred to the hospital), obstetric procedures, complications of labor and delivery, method of delivery, and clinical estimate of gestation.
- Infant's sex, plurality, birth order, birthweight, and APGAR scores; the prophylactic used in the infant's eyes; whether the infant was transferred to another hospital; and any abnormal conditions or congenital anomalies.

MORTALITY (1989-2000)

- Date, hour, and place of death.
- Decedent's age at death, sex, race, ancestry, education, marital status, birthplace, and place of residence.
- Underlying cause of death; whether an autopsy was performed and, if so, whether results were available when cause of death was determined; if death resulted from an external cause (accident, suicide, or homicide), the circumstances of the injury, including whether it was sustained at work. If death resulted from an injury at work, the industry in which the decedent was employed is recorded.

FETAL MORTALITY (1989-2000)

- Date, hour, and place of delivery.
- Age, race, ancestry, and education, of parents; place of residence and marital status of the mother.
- Cause of fetal death; the sex, weight, plurality, birth order, and any anomalies or abnormal conditions of the fetus.

- Significant conditions of the mother, including number of prior pregnancies, date and result of last prior pregnancy; date of last normal menses; month in which prenatal care began; number of prenatal visits; maternal risk factors during the pregnancy--medical conditions, tobacco and alcohol use, and weight gain; clinical estimate of gestation; obstetric procedures; complications of labor and delivery; method of delivery.

MARRIAGE (1993-2000)

- Date and place of license issuance; date and place of marriage.
- Age, race, education, birthplace, and residence of the bride and groom.
- Previous marital history, including number of prior marriages and reason for termination of the most recent prior marriage (death or divorce), if applicable.

MARITAL TERMINATION (1993-1997)

- Date and place of decree; type of termination (dissolution or invalid marriage); legal grounds for invalid marriage; whether the marriage was terminated in tribal or district court.
- Age, race, education, birthplace, and residence of wife and husband.
- Number of this marriage; reason for termination of the most recent prior marriage for each party; date the couple last lived in the same household; length of marriage; and petitioner.
- Number of children born alive of this marriage; number of children under 18 years of age in the household; number of children whose custody was awarded to the wife, husband, both, or another party.

INDUCED ABORTION (1989-2000)

- Date and place of procedure.
- Age, ancestry, race, education, marital status, birth date, and county of residence of patient.
- Pregnancy history, including date of last normal menses, clinical estimate of gestation, and number and result of prior pregnancies.
- Primary procedure that terminated pregnancy, additional procedures used, and resulting complications.

TECHNICAL OVERVIEW

DATA SOURCES AND LIMITATIONS

DELAY IN REPORTING

This report includes vital records and transcripts for calendar year 2000 received before July 15, 2001. The number of records received after this latter date is small, and since the use of this "cut off" date is fairly consistent from year to year, the effect of omitted data on trends and patterns is likely to be minimal.

GEOGRAPHIC ALLOCATION

Table titles or footnotes indicate whether Vital Statistics are shown by place of residence or place of occurrence. For example, if a resident of Florida is killed in an automobile accident in Montana, the death is counted as a Montana occurrence but is included in Florida's residence statistics. Births, deaths, and fetal deaths may be tabulated either way. For deaths, the place of residence is the usual state and county of residence of the decedent. For births, the place of residence of the child is the usual state and county of residence of the mother. Place of residence, when reported for fetal deaths, is that of the mother.

Residence data for births, deaths, and fetal deaths occurring out-of-state are available because of a cooperative, interstate transcript-exchange agreement. All states and the provinces of Canada participate in this agreement under the auspices of the National Association for Public Health Statistics and Information Systems. Interstate data on induced abortions are not available for all states, so all tabulations of abortion data except those in **Table 27** are by Montana occurrence. The resident abortion statistics in **Table 27** are incomplete because only in-state occurrences to Montana residents are tabulated.

While we can determine most of the nonresidents marrying in Montana, we do not know how many Montana residents marry outside of the state, nor do we know of residency changes associated with marital terminations. No exchange agreement is in effect for marriages or marital terminations. These tabulations are thus only by Montana occurrence. Data on marital terminations are limited to Montana decrees involving at least one Montana resident and are tabulated as occurrences by the Montana county in which the decree was issued.

CAUSE OF DEATH CERTIFICATION

The medical certification section of the Montana Death Certificate asks for information on the causal and chronological sequence of events leading to death. The attending physician or coroner completes this section of the death certificate. It consists of two parts. Part I is used for reporting the conditions leading directly to death and, for each, the interval between onset of the conditions and death. Part II is for reporting any important diseases or conditions that influenced the course of the illness or trauma unfavorably, thus contributing to the fatal outcome, but that were not related to the immediate cause of death. For example, a medical certification might read as follows:

Part	I.	Death	was	caused	by:
<u>Duration</u>					
	Immediate cause	Due to	(a)	<i>postoperative bronchial pneumonia</i>	<i>3 days</i>
		Due to	(b)	<i>lobectomy</i>	<i>1 week</i>
	Underlying cause	Due to	(c)	<i>primary cancer of lung</i>	<i>1 year</i>
Part II. Other significant conditions					
	<i>Hypertensive cardiovascular disease</i>				

The causes of death in this report represent the underlying causes derived from the information provided on Parts I and II. In the above example, the underlying cause would be lung cancer. Each condition or cause reported on death certificates is classified according to the International Statistical Classification of Diseases, Injuries, and Related Health Problems, Tenth Revision, World Health Organization, Geneva, 1992 (ICD-10). The nosologist, the person responsible for coding cause of death, develops an underlying cause using ICD-10 codes and coding procedures developed for nationwide use by the National Center for Health Statistics (NCHS) of the Centers for Disease Control and Prevention (CDC), Public Health Services, U.S. Department of Health and Human Services. The ICD-10 code for the death in the illustration above would be C34.9, "malignant neoplasm of bronchus or lung, area or lobe unspecified."

When the underlying cause is a traumatic injury, poisoning, or other adverse effects, this report shows tabulations of deaths according to the nature of the event that led to fatal injury, poisoning, or adverse effect rather than the nature of the event's consequences.

Whenever possible, deaths are classified by the underlying cause reported. Exceptions occur when the underlying cause is not apparent from the certificate and clarification is not available. In these instances, the probable underlying cause is determined using a system of rules developed by NCHS.

MARRIAGE AND MARITAL TERMINATION

Reliance on national marriage and marital termination statistics is limited by differences in data collection and data availability at or below the state level. Marriage, marital termination and residency are defined by the laws of each state. The minimum age for marriage, marriage license requirements, residency requirements for marital termination, acceptable grounds for such termination, and minimum period between marriage and marital termination vary from state to state. These differences can affect the comparability of data from state to state.

Data aggregation is also affected by how data are collected and reported. For most states, including Montana, frequency of marriage is based on marriages performed. For New Mexico, New York City, and some counties of Arizona, data represent licenses issued.

POPULATION ESTIMATES

All crude rates per 1,000 or per 100,000 population in this report are based on population data provided by the U. S. Bureau of the Census (Census Bureau). For intercensal years (all years not ending with 0"), the Census Bureau uses the Tax Return method (formerly, the Administrative Records Method) to arrive at population "estimates." This method includes the use of Vital (birth and death) Records. These estimates refer to the resident population on July 1st of the year indicated. Population data for census years are known as "enumerations," and refer to the resident population on April 15th of the year indicated. The Census Bureau arrives at enumerations without the use of Vital Records. Both estimates and enumerations are used to derive the population-based mortality rates.

RACE

Tabulation of vital events by race is imprecise for several reasons. First, it is difficult to identify a single or predominant race when persons are of mixed ancestry, as is the case for many U.S. citizens. A second difficulty with tabulations by race is that the category assignment is based on the opinion of the informant. As such, it may not reflect the same definitions of racial groups from one record to the next.

For births and fetal deaths, the race of the infant or fetus is defined as the reported race of the mother. This is the NCHS definition of infant or fetal race and is used so Montana statistics may be compared to U.S. regional and national statistics.

There are two other areas where racial classifications may lack precision: the "Hispanic" ancestry designation and the grouping of responses into an "Other" category. Hispanic ancestry is reported separately from race. Thus, it may apply to any racial category including "White" and "Native American." The proportion of persons in Montana reported as being of Hispanic ancestry is so small, however, that creating racial categories based on combined racial and Hispanic classifications is unlikely to yield any useful information.

The "Other" category is made up of all individuals not classified in the identified group(s) shown in the table. Those for whom race is not reported are therefore included as "Other." According to the 2000 Census, more than 90% of Montana's population at the time considered itself white, while indicating no other racial classification. More than 92% of the population considered itself white in combination with some other racial classification, such as African American or American Indian (Native American). Thus, classifying persons of unknown race as "Other" could introduce an unknown, probably slight, bias into statistics calculated from the data in these tables.

MARITAL STATUS

Mother's marital status is designated "Married" on the birth record if the mother is shown on the birth certificate as married "at birth, conception or any time in between." "Unmarried" indicates that the mother was not married at any time during the pregnancy.

Marital status for death and abortion records is "Married or Separated," "Divorced," "Widowed," or "Single" as described by the informant. The "Divorced" designation on such records includes both marital dissolutions (formerly called divorces) and invalid marriages (formerly called annulments).

LIMITATIONS OF SMALL NUMBERS

The occurrence of vital events is subject to chance variation. For example, a birth at 11:59 P.M. on December 31 would be counted in one year. If the infant had been born two minutes later at 12:01 A.M., the birth would be counted in the following year. This phenomenon is not of great importance for states or counties with substantial populations, since the relative number of births is not greatly affected by one event. However, for Montana counties, with their relatively small populations, the occurrence of an event in one year rather than the next could change the pattern of events and might lead to mistaken conclusions about trends in the county's birth rate.

When the number of events is displayed, the occurrence of small numbers is obvious. When rates or percentages are based on small numbers of events, that fact may not be immediately apparent. Rates or trends based on small numbers, less than 100, must be interpreted with caution. Meaningful conclusions cannot be drawn based on frequencies of less than five. This report provides the frequency and rate in all tables where rates based on small numbers of events may appear so the reader can gauge the reliability of these rates.

Similarly, percentages based on small totals can be misleading. For example, if there were ten births in a county and three of the new mothers were 18 or 19, the distribution of births by mother's age would show that 30% of the county's births were to teenagers. While accurate, this statistic is probably not very useful for making policy.

Tabulating occurrences of an event over a period of several years may reduce the impact of chance variability in rates or percentages based on small numbers. An example is the five-year infant mortality rate shown in

Table 13 or the five-year “rolling” rates displayed in **Figure 15**. However, the OVS has limited the use of multi-year rates in this report because such rates can conceal changes in trends that take place during the multi-year period.

DATA TABULATION AND PRESENTATION

GEOGRAPHIC TABULATION

The birth, death, fetal death, and induced abortion data are tabulated for Montana residents by place of residence and for all vital events occurring in Montana by place of occurrence. All occurrence statistics include events that occurred in Montana to residents of other states. Births, deaths, and fetal deaths that occurred out-of-state to Montana residents are included under resident statistics. Resident statistics on induced abortions include only in-state occurrences.

CAUSE OF DEATH AND CONVERSION TO ICD-10

Periodically, the system used for the classification of diseases and causes of death is revised. Beginning with mortality data for 1999, OVS is now reporting underlying cause of death information captured and categorized by ICD-10.

The discussion and tables in this report refer to the underlying cause-of-death, grouped into named diseases and conditions. These are groupings that NCHS and most public health professionals use. In many cases, the ICD-10 and ICD-9 codes are listed in the table along with the condition or disease name; however, some tables show only the name.

Figure 1 shows how ICD-10 codes are grouped into cause-of-death conditions and diseases for many of the causes of death tabulated and discussed in this report, as well categories frequently reported as “leading” causes of death. Corresponding ICD-9 codes are shown, as well as preliminary “comparability ratios” computed by NCHS.

Each new version of the ICD code introduces new categories, titles, groupings of disease, and coding rules in an effort to keep pace with the needs of medical and public health research. However, each new version introduces problems with the comparability of mortality data classified with different versions of the code. Past revisions of ICD have revealed discontinuities in statistical trends that can be attributed to changes in coding and classification procedures alone.

NCHS attempts to quantify the effects of ICD revisions through double coding of death records (i.e. coding underlying cause of death on each record using both the old and new versions of ICD) and comparing the frequencies produced by the two coding schemes. For each category of interest, a ratio of the number of deaths classified in the latest version to that classified in the previous version is calculated. Such “comparability ratios” provide estimates of the change attributed to the revision alone and help distinguish “coding changes” from “real changes,” (i.e. changes in the underlying forces of mortality in the population). The comparability ratios shown in **Figure 1** represent some preliminary results from a very large nonrandom sample of death records (more than 1.8 million) from 50 states and the District of Columbia, about 80 percent of all resident deaths occurring in the U.S. in 1996. These ratios are presented to indicate the approximate order of magnitude of expected changes in coding for underlying cause of death. They should not be expected to apply precisely to Montana’s death experience in 2000 or that of any other particular geographic location in any other year.

For example, the comparability ratio for “nephritis, nephrotic syndrome, and nephrosis”, 1.2320, indicates we can expect to see an increase of roughly one quarter in the number of deaths due to this cause solely because of the change from ICD-9 to ICD-10. The comparability ratio for pneumonia and influenza, 0.6982, indicates that the observed number of deaths due to that cause will be reduced by about 30% because of the coding change. The comparability ratio for Alzheimer’s Disease of 1.5536 means we can expect approximately half again as many such classifications. Such effects must be taken into account when interpreting trends in mortality if one is to isolate the underlying forces of mortality that public health programs seek to affect.

Such changes in the frequencies of death for various causes are reflected in crude and age-adjusted rates of death for specific causes of death. For example, trends in the age-adjusted death rates for several causes of death shown in this report show marked discontinuities between rates collected before 1999 using ICD-9 and those collected during and after 1999 using ICD-10. (See the discussion and display of “Age-specific and age-adjusted death rates” in the Mortality section of the narrative.

Among other notable changes is the elimination of the ICD-9 category “chronic obstructive pulmonary diseases” (COPD), which has been replaced by the ICD-10 category “chronic lower respiratory diseases” (CLRD). The categories differ in that CLRD does not contain those causes of death in ICD-9 rubric 495. These causes include “extrinsic allergic alveolitis,” i.e. allergic alveolitis and pneumonitis due to inhaled organic dust.

Also, ICD-10 removes “misadventures to patients in surgical or medical care” (ICD-9: 870 - 876), “surgical and medical procedures causing reaction,” (ICD-9: 878 - 879), and “drugs causing adverse effects in therapeutic use “ (ICD-9: 930 - 949) from the “accidents” category and places them in a new category called “complications of medical and surgical care.”

The ICD-9 category “homicide and legal intervention,” which was reportable as a leading cause of death, was replaced by “assault” which no longer contains “legal intervention” (ICD-9: 970 - 978) but still contains “homicide” (ICD-9: 960 - 969).

Figures 2, 3, and 4 show ICD-10 code ranges for cause-of-death categories displayed in **Tables 9, 10, and 12**, respectively. **Table 9** lists up to 358 causes of death commonly listed by NCHS. **Table 10** shows up to 113 causes of death commonly listed. Some of these 113 causes are used for ranking leading causes of death. Those categories preceded by a pound sign (#) are eligible for ranking as a leading cause of death. **Table 12** lists up to 130 causes of infant death. Again, those categories preceded by a pound sign are eligible for ranking as a leading cause of death.

Figure 1

CLASSIFICATION (ICD-10 AND ICD-9) CODES FOR UNDERLYING CAUSES OF DEATH

Underlying Cause of Death	ICD-10 Code (s)	ICD-9 Code (s)	Comparability Ratio
Tuberculosis	A16 - A19	010 - 018, 137	0.8547
Septicemia	A40 - A41	038	1.1949
Human Immunodeficiency Virus (HIV) Infection	B20 - B24	042 - 044	1.0637
Malignant Neoplasms (Cancer)	C00 - C97	140 - 208	1.0068
Diabetes Mellitus (Diabetes)	E10 - E14	250	1.0082
Alzheimer' s Disease	G30	331.0	1.5536
Diseases of Heart	I00 - I09, I11, I13, I20 - I51	390 - 398, 402, 404, 410 - 429	0.9858
Cerebrovascular Disease	I60 - I69	430 - 434, 436 - 438	1.0588
Atherosclerosis	I70	440	0.9637
Pneumonia and Influenza	J10 - J18	480 - 487	0.6982
Chronic Obstructive Pulmonary Diseases	N/A	490 - 496	N/A
Chronic Lower Respiratory Diseases	J40 - J47	490 - 494, 496	1.0478
Diseases of Appendix	K35 - K38	540 - 543	1.0347
Chronic Liver Disease and Cirrhosis	K70, K73 - K74	571	1.0367
Nephritis, Nephrotic Syndrome, and Nephrosis	N00 - N07, N17 - N19, N25 - N27	580 - 589	1.2320
Certain Conditions Originating in the Perinatal Period	P00 - P96	760 - 771.2, 771.4 - 779	1.0658
Congenital Malformations, Deformations, and Chromosomal Anomalies	Q00 - Q99	740 - 759	0.8470
Sudden Infant Death Syndrome (SIDS)	R95	798.0	1.0362
Accidents	V01 - X59, Y85 - Y86	E800 - E869, E880 - E929	1.0305
Motor Vehicle Accidents	V02 - V04, V09.0, V09.2, V12 - V14, V19.0 - V19.2, V19.4 - V19.6, V20 - V79, V80.3 - V80.5, V81.0 - V81.1, V82.0 - V82.1, V83 - V86, V87.0 - V87.8, V88.0 - V88.8, V89.0, V89.2	E810 - E825	0.8527
Non-Motor Vehicle Accidents	V01, V05 - V08, V09.1, V09.3 - V11, V15 - V18, V19.3, V19.7 - V19.9, V80.1 - V80.2, V80.6 - V80.9, V81.2 - V81.9, V82.2 - V82.9, V87.9, V88.9, V89.3 - X59.9, Y85 - Y86	E800 - E807, E826 - E929	1.1134
Intentional Self-Harm (Suicide)	X60 - X84, Y87.0	E950 - E959	0.9962
Assault (Homicide)	X85 - Y09, Y87.1	E960 - E969	0.9983
Complications of Medical and Surgical Care	Y40 - Y84, Y88	E870 - E879, E930 - E949	NA

NA Not available.

N/A The category, chronic obstructive pulmonary diseases, is not used in ICD-10 and is therefore not applicable.

Figure 2

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
All causes	
I Certain infectious and parasitic diseases	A00-B99
Intestinal infectious diseases	A00-A09
1 Cholera	A00
Other intestinal infectious diseases	A01-A08
2 Typhoid fever	A01.0
3 Paratyphoid fevers and other salmonella infections	A01.1-A01.4, A02
4 Shigellosis	A03
5 Other bacterial food-borne intoxications	A05
6 Amebiasis	A06
7 Intestinal infections due to other specified organisms	A04, A07-A08
8 Diarrhea and gastroenteritis of presumed infectious origin	A09
Tuberculosis	A16-A19
9 Respiratory tuberculosis	A16
10 Other tuberculosis	A17-A19
Zoonotic and other bacterial diseases	A20-A49
11 Plague	A20
12 Brucellosis	A23
13 Tetanus	A33-A35
14 Diphtheria	A36
15 Whooping cough	A37
16 Scarlet fever and erysipelas	A38, A46
17 Meningococcal infection	A39
18 Septicemia	A40-A41
19 Other zoonotic and bacterial diseases	A21-A22, A24-A32, A42-A44, A48-A49
Infections with a predominately sexual mode of transmission	A50-A64
Syphilis	A50-A53
20 Cardiovascular syphilis	A52.0
21 Neurosyphilis	A52.1-A52.3
22 Other and unspecified syphilis	A50-A51, A52.7-A52.9, A53
23 Gonococcal infection	A54
24 Other infections with a predominately sexual mode of transmission	A55-A64
Other infections caused by spirochetes, chlamydia or rickettsia	A65-A79
25 Lyme disease	A69.2
26 Typhus fever	A75
27 All other infections caused by spirochetes, chlamydia or rickettsia	A65-A68, A69.0-A69.1, A69.8-A69.9, A70-A74, A77-A79
Viral diseases	A80-B34
28 Acute poliomyelitis	A80
29 Rabies	A82
30 Arthropod-borne viral encephalitis	A83-A84, A85.2
31 Yellow fever	A95
32 Other and unspecified arthropod-borne viral and hemorrhagic fevers	A90-A94, A96-A99
33 Herpesviral (herpes simplex) infections	B00

Figure 2 (CONTINUED)

INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
34 Zoster (herpes zoster)	B02
35 Smallpox	B03
36 Measles	B05
37 Rubella (German measles)	B06
38 Viral hepatitis	B15-B19
Human immunodeficiency virus (HIV) disease	B20-B24
39 Human immunodeficiency virus (HIV) disease resulting in infectious and parasitic diseases	B20
40 Human immunodeficiency virus (HIV) disease resulting in malignant neoplasms	B21
41 Human immunodeficiency virus (HIV) disease resulting in other specified diseases	B22
42 Human immunodeficiency virus (HIV) disease resulting in other conditions	B23
43 Unspecified human immunodeficiency virus (HIV) disease	B24
44 All other and unspecified viral diseases	A81 ,A85.0-A85.1, A85.8, A86-A89, B01, B04, B07-B09, B25-B34
Other and unspecified infectious and parasitic diseases and their sequelae	B35-B99
45 Mycoses	B35-B49
Protozoal diseases	B50-B64
46 Malaria	B50-B54
47 Leishmaniasis	B55
48 Trypanosomiasis	B56-B57
49 Pneumocystosis	B59
50 Other and unspecified protozoal diseases	B58,B60-B64
Helminthiases	B65-B83
51 Schistosomiasis (bilharziasis)	B65
52 Other and unspecified helminthiases	B66-B83
53 Sequelae of tuberculosis	B90
54 Sequelae of poliomyelitis	B91
55 All other and unspecified infectious and parasitic diseases and their sequelae	B85-B89, B92-B99
II Neoplasms	C00-D48
Malignant neoplasms	C00-C97
Malignant neoplasms of lip, oral cavity and pharynx	C00-C14
56 Of lip	C00
57 Of tongue	C01-C02
58 Of pharynx	C10-C13, C14.0
59 Of other and unspecified sites within the lip, oral cavity and pharynx	C03-C09, C14.2-C14.8
Malignant neoplasms of digestive organs	C15-C26
60 Of esophagus	C15
61 Of stomach	C16
62 Of small intestine	C17
Of colon, rectum and anus	C18-C21
63 Colon	C18

Figure 2 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
64 Rectosigmoid junction and rectum	C19-C20
65 Anus and anal canal	C21
Of liver and intrahepatic bile ducts	C22
66 Liver	C22.0, C22.2-C22.9
67 Intrahepatic bile duct carcinoma	C22.1
68 Of gallbladder and extrahepatic bile ducts	C23-C24
69 Of pancreas	C25
70 Of other and ill-defined digestive organs	C26
Malignant neoplasms of respiratory and intrathoracic organs	C30-C39
71 Of nasal cavity, middle ear and accessory sinuses	C30-C31
72 Of larynx	C32
73 Of trachea, bronchus and lung	C33-C34
74 Of thymus, heart, mediastinum and pleura	C37-C38
75 Of other and ill-defined sites in respiratory system and intrathoracic organs	C39
76 Malignant neoplasms of bone and articular cartilage	C40-C41
Melanoma and other malignant neoplasms of skin	C43-C44
77 Malignant melanoma of skin	C43
78 Other malignant neoplasms of skin	C44
Malignant neoplasms of mesothelial and soft tissue	C45-C49
79 Mesothelioma	C45
80 Kaposi's sarcoma	C46
81 Of other mesothelial and soft tissue	C47-C49
82 Malignant neoplasm of breast	C50
Malignant neoplasms of female genital organs	C51-C58
83 Of vulva and vagina	C51-C52
84 Of cervix uteri	C53
85 Of corpus uteri and uterus, part unspecified	C54-C55
86 Of ovary	C56
87 Of other and unspecified female genital organs	C57
88 Of placenta	C58
Malignant neoplasms of male genital organs	C60-C63
89 Of prostate	C61
90 Of testis	C62
91 Of penis and other and unspecified male genital organs	C60, C63
Malignant neoplasms of urinary tract	C64-C68
92 Of kidney and renal pelvis	C64-C65
93 Of bladder	C67
94 Of other and unspecified sites within the urinary tract	C66, C68
95 Malignant neoplasm of eye and adnexa	C69

Figure 2 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
Malignant neoplasms of meninges, brain and other parts of central nervous system	C70-C72
96 Of brain	C71
97 Of other parts of central nervous system	C70, C72
98 Malignant neoplasms of thyroid and other endocrine glands	C73-C75
99 Other malignant neoplasms of other and unspecified sites	C76-C80, C97
Malignant neoplasms of lymphoid, hematopoietic and related tissue	C81-C96
100 Hodgkin's disease	C81
Of other lymphoid, hematopoietic and related tissue	C82-C85, C96
101 Non-Hodgkin's lymphoma	C82-C85
102 Of other and unspecified lymphoid, hematopoietic and related tissue	C96
103 Malignant immunoproliferative diseases	C88
104 Multiple myeloma and malignant plasma cell neoplasms	C90
Leukemia	C91-C95
105 Lymphoid leukemia	C91
106 Myeloid leukemia	C92
107 Monocytic leukemia	C93
108 Other and unspecified leukemia	C94-C95
In situ neoplasms	D00-D09
109 Carcinoma in situ of breast and genitourinary system	D05-D07
110 Carcinoma in situ of other and unspecified sites	D00-D04, D09
Benign neoplasms	D10-D36
111 Of female genital organs	D25-D28
112 Of eye, brain and other parts of central nervous system	D31-D33
113 Of other and unspecified sites	D10-D24, D29-D30, D34-D36
114 Neoplasms of uncertain or unknown behavior of specified sites	D37-D47
115 Neoplasm of uncertain or unknown behavior of unspecified sites	D48
III Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	D50-D89
Anemias	D50-D64
116 Nutritional anemias	D50-D53
117 Hemolytic anemias	D55-D59
118 Aplastic anemias	D60-D61
119 Acute posthemorrhagic and other anemias	D62, D64
120 Coagulation defects, purpura and other hemorrhagic conditions	D65-D69
121 Other diseases of blood and blood-forming organs	D70-D76
122 Certain disorders involving the immune mechanism	D80-D89
IV Endocrine, nutritional and metabolic diseases	E00-E88
Endocrine diseases	E00-E34
123 Disorders of thyroid gland	E00-E07
124 Diabetes mellitus	E10-E14
125 Disorders of pituitary gland	E22-E23
126 Disorders of adrenal glands	E24-E27
127 Diseases of thymus	E32
128 Other endocrine diseases	E15-E21, E28-E31, E34

Figure 2 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
Nutritional diseases	E40-E68
Malnutrition	E40-E46
129 Nutritional marasmus	E41
130 Other and unspecified malnutrition	E40, E42-E46
131 Other nutritional deficiencies	E50-E64
132 Obesity and other hyperalimentation	E65-E68
Metabolic disorders	E70-E88
133 Cystic fibrosis	E84
134 Volume depletion, disorders of fluid, electrolyte and acid-base balance	E86-E87
135 Other metabolic disorders	E70-E83, E85, E88
V Mental and behavioral disorders	F01-F99
136 Organic dementia	F01, F03
137 Other and unspecified organic mental disorders	F04-F09
Mental and behavioral disorders due to psychoactive substance use	F10-F19
138 Mental and behavioral disorders due to use of alcohol	F10
139 Mental and behavioral disorders due to other psychoactive substance use	F11-F19
140 Schizophrenia, schizotypal and delusional disorders	F20-F29
141 Mood (affective) disorders	F30-F39
142 Neurotic, stress-related and somatoform disorders	F40-F48
143 Mental retardation	F70-F79
144 Other and unspecified mental and behavioral disorders	F50-F69, F80-F99
VI Diseases of the nervous system	G00-G98
145 Meningitis	G00, G03
146 Other inflammatory diseases of central nervous system	G04-G09
147 Parkinson's disease	G20-G21
148 Alzheimer's disease	G30
149 Multiple sclerosis	G35
150 Epilepsy	G40-G41
151 Transient cerebral ischemic attacks and related syndromes	G45
152 Infantile cerebral palsy	G80
153 All other diseases of nervous system	G10-G12, G23-G25, G31, G36-G37, G43-G44, G47-G72, G81-G98
154 VII Diseases of the eye and adnexa	H00-H57
155 VIII Diseases of the ear and mastoid process	H60-H93
156 Acute rheumatic fever	I00-I02
Chronic rheumatic heart diseases	I05-I09
157 Rheumatic mitral valve diseases	I05
158 Rheumatic aortic valve diseases	I06
159 Disorders of both mitral and aortic valves	I08.0
160 Other chronic rheumatic heart diseases	I07, I08.1-I08.9, I09
Hypertensive diseases	I10-I13
161 Essential (primary) hypertension	I10
162 Hypertensive heart disease	I11
163 Hypertensive renal disease	I12

Figure 2 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
164 Hypertensive heart and renal disease	I13
Ischemic heart diseases	I20-I25
165 Acute myocardial infarction	I21-I22
166 Other acute ischemic heart diseases	I24
Other forms of chronic ischemic heart disease	I20, I25
167 Atherosclerotic cardiovascular disease, so described	I25.0
168 All other forms of chronic ischemic heart disease	I20, I25.1-I25.9
Other heart diseases	I26-I51
Pulmonary heart disease and diseases of pulmonary circulation	I26-I28
169 Pulmonary embolism	I26
170 Other pulmonary heart disease and diseases of pulmonary circulation	I27-I28
Other non-pulmonary forms of heart disease	I30-I51
171 Acute and subacute endocarditis	I33
172 Diseases of pericardium and acute myocarditis	I30-I31, I40
Other diseases of endocardium	I34-I38
173 Nonrheumatic mitral valve disorders	I34
174 Nonrheumatic aortic valve disorders	I35
175 All other diseases of endocardium	I36-I38
176 Cardiomyopathy	I42
177 Conduction disorders and cardiac dysrhythmias	I44-I49
Heart failure	I50
178 Congestive heart failure	I50.0
179 Other and unspecified heart failure	I50.1-I50.9
180 Myocarditis, unspecified and myocardial degeneration	I51.4-I51.5
181 All other and ill-defined forms of heart disease	I51.0-I51.3, I51.6-I51.9
Cerebrovascular diseases	I60-I69
182 Subarachnoid hemorrhage	I60
183 Intracerebral and other intracranial hemorrhage	I61-I62
184 Cerebral infarction	I63
185 Stroke, not specified as hemorrhage or infarction	I64
186 Other cerebrovascular diseases and their sequelae	I67, I69
Diseases of arteries, arterioles and capillaries	I70-I78
187 Atherosclerosis	I70
188 Aortic aneurysm and dissection	I71
189 Other diseases of arteries, arterioles and capillaries	I72-I78
Other disorders of circulatory system	I80-I99
190 Phlebitis, thrombophlebitis, venous embolism and thrombosis	I80-I82
191 All other and unspecified disorders of circulatory system	I83-I99
X Diseases of the respiratory system	J00-J98
Acute upper respiratory infections	J00-J06
192 Acute pharyngitis and tonsillitis	J02-J03
193 Acute laryngitis and tracheitis	J04
194 Other and unspecified acute upper respiratory infections	J00-J01, J05-J06
Other diseases of the respiratory system	J10-J98
195 Influenza	J10-J11
Pneumonia	J12-J18

Figure 2 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
196 Viral pneumonia, not elsewhere classified	J12
197 Bacterial pneumonia	J13-J15
198 Pneumonia due to other or unspecified organisms	J16, J18
Other acute lower respiratory infections	J20-J22
199 Acute bronchitis and bronchiolitis	J20-J21
200 Unspecified acute lower respiratory infection	J22
201 Other diseases of upper respiratory tract	J30-J39
Chronic lower respiratory diseases	J40-J47
Bronchitis, chronic and unspecified, emphysema and asthma	J40-J46
202 Bronchitis, not specified as acute or chronic	J40
203 Chronic bronchitis	J41-J42
204 Emphysema	J43
205 Other chronic obstructive pulmonary disease	J44
206 Asthma	J45-J46
207 Bronchiectasis	J47
Lung diseases due to external agents	J60-J70
208 Pneumoconioses and chemical effects	J60-J66, J68
Pneumonitis due to solids and liquids	J69
209 Pneumonitis due to food and vomit	J69.0
210 Other pneumonitis due to solids and liquids	J69.1-J69.8
211 Other lung diseases due to external agents	J67, J70
212 Suppurative and necrotic conditions of lower respiratory tract	J85-J86
213 Pleural effusion and plaque	J90, J92
214 All other diseases of respiratory system	J80-J84, J93-J98
XI Diseases of the digestive system	K00-K92
215 Diseases of oral cavity, salivary glands and jaws	K00-K14
Diseases of other parts of digestive system	K20-K92
216 Diseases of esophagus	K20-K22
Peptic ulcer	K25-K28
217 Gastric ulcer	K25
218 Duodenal ulcer	K26
219 Peptic ulcer, site unspecified	K27
220 Gastrojejunal ulcer	K28
221 Gastritis and duodenitis	K29
222 Dyspepsia and other diseases of stomach and duodenum	K30-K31
223 Diseases of appendix	K35-K38
224 Hernia	K40-K46
225 Crohn's disease and ulcerative colitis	K50-K51
226 Vascular disorders and obstruction of intestine without hernia	K55-K56
227 Diverticular disease of intestine	K57
228 Other diseases of intestines and peritoneum	K52, K58-K63
229 Diseases of peritoneum	K65-K66
Diseases of liver	K70-K76
230 Alcoholic liver disease	K70
231 Chronic hepatitis, not elsewhere classified	K73
232 Fibrosis and cirrhosis of liver	K74

Figure 2 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
233 Other diseases of liver	K71-K72, K75-K76
234 Cholelithiasis and other disorders of gallbladder	K80-K82
Disorders of biliary tract and pancreas	K83-K86
235 Pancreatitis	K85, K86.0-K86.1
236 Other disorders of biliary tract and pancreas	K83, K86.2-K86.9
237 All other diseases of digestive system	K90, K92
XII Diseases of the skin and subcutaneous tissue	L00-L98
238 Infections of skin and subcutaneous tissue	L00-L08
239 Other and unspecified diseases of skin and subcutaneous tissue	L10-L98
XIII Diseases of the musculoskeletal system and connective tissue	M00-M99
240 Rheumatoid arthritis and related inflammatory polyarthropathies	M05-M08
241 Systemic lupus erythematosus	M32
242 Other arthropathies and related disorders	M00, M02, M10-M31, M33-M35
243 Dorsopathies	M40-M54
244 Soft tissue disorders	M60-M79
Osteopathies, chondropathies and other disorders of musculoskeletal system and connective tissue	M80-M99
245 Osteoporosis	M80-M81
246 Other osteopathies, chondropathies and disorders of musculoskeletal system and connective tissue	M83-M99
XIV Diseases of the genitourinary system	N00-N98
Diseases of urinary system	N00-N39
Glomerular and renal tubulo-interstitial diseases	N00-N15
Glomerular diseases	N00-N07
247 Acute and rapidly progressive nephritic syndrome	N00-N01
248 Nephrotic syndrome	N04
249 Other and unspecified glomerular diseases	N02-N03, N05-N07
250 Renal tubulo-interstitial diseases	N10-N15
251 Renal failure	N17-N19
252 Urolithiasis	N20-N23
253 Other and unspecified disorders of kidney	N25-N27
254 Urinary tract infection, site not specified	N39.0
255 Other diseases of urinary system	N28-N36, N39.1-N39.9
Diseases of male genital organs	N40-N50
256 Hyperplasia of prostate	N40
257 Other diseases of male genital organs	N41-N50
258 Disorders of breast	N60-N64
Disorders of female genital organs	N70-N98
259 Inflammatory diseases of female pelvic organs	N70-N76
260 Noninflammatory disorders of female genital tract	N80-N98
XV Pregnancy, childbirth and the puerperium	O00-O99
Pregnancy with abortive outcome	O00-O07
261 Ectopic pregnancy	O00
262 Spontaneous abortion	O03
263 Medical abortion	O04

Figure 2 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
264 Other abortion	O05
265 Other and unspecified pregnancy with abortive outcome	O01-O02, O06-O07
Other direct obstetric deaths	O10-O92
266 Eclampsia and pre-eclampsia	O11, O13-O16
267 Hemorrhage of pregnancy and childbirth and placenta previa	O20, O44-O46, O67, O72
Complications predominantly related to the puerperium	O85-O92
268 Obstetric embolism	O88
269 Other complications predominately related to the puerperium	O85-O87, O89-O92
270 All other direct obstetric causes	O10, O12, O21-O43, O47-O66, O68-O71, O73-O75
271 Obstetric death of unspecified cause	O95
272 Other deaths related to pregnancy, childbirth and the puerperium	O96-O97
273 Indirect obstetric deaths	O98-O99
XVI Certain conditions originating in the perinatal period	P00-P96
274 Newborn affected by maternal factors and by complications of pregnancy, labor and delivery	P00-P04
275 Disorders related to short gestation and low birth weight, not elsewhere classified	P07
276 Birth trauma	P10-P15
277 Intrauterine hypoxia and birth asphyxia	P20-P21
278 Respiratory distress of newborn	P22
279 Other respiratory conditions originating in the perinatal period	P23-P28
280 Infections specific to the perinatal period	P35-P39
281 Other and unspecified conditions originating in the perinatal period	P05, P08, P29, P50-P96
XVII Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99
282 Anencephaly and similar malformations	Q00
283 Spina bifida	Q05
284 All other congenital malformations of nervous system	Q01-Q04, Q06-Q07
285 Congenital malformations of heart	Q20-Q24
286 Other congenital malformations of circulatory system	Q25-Q28
287 Congenital malformations of respiratory system	Q30-Q34
288 Other congenital malformations and deformations	Q10-Q18, Q35-Q89
289 Down's syndrome	Q90
290 All other chromosomal abnormalities, not elsewhere classified	Q91-Q99
XVIII Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R99
291 Senility	R54
Ill-defined and unknown causes of mortality	R95-R99
292 Sudden infant death syndrome	R95
293 Other ill-defined and unknown causes of mortality	R96-R99
294 All other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R53, R55-R94
XX External causes of mortality	V01-Y89
Accidents	V01-X59, Y85-Y86
Transport accidents	V01-V99, Y85

Figure 2 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
295 Railway accidents	V05, V15, V80.6, V81.2-V81.9
Motor vehicle accidents	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
296 Pedestrian involved in collision with motor vehicle	V02-V04
297 Pedalcyclist involved in collision with motor vehicle	V12-V14, V19.0-V19.2, V19.4-V19.6
298 Motorcyclist involved in any accident except collision with railway train	V20-V24, V26-V34, V36-V39
Motor vehicle accident involving collision with railway train	V25, V35, V45, V55, V65, V75, V81.0-V81.1, V87.6, V88.6
299 Motorcyclist involved in collision with railway train	V25, V35
300 Other motor vehicle accident involving collision with railway train	V45, V55, V65, V75, V81.0-V81.1, V87.6, V88.6
301 Occupant of motor vehicle involved in collision with other (non-motorized) road vehicle, streetcar, animal or pedestrian	V40-V41, V46-V47, V50-V51, V56-V57, V60-V61, V66-67, V70-V71, V76-V77
302 Occupant of car, pickup truck or van involved in collision with other motor vehicle	V42-V44, V49, V52-V54, V59
303 Occupant of heavy transport vehicle or bus involved in collision with other motor vehicle	V62-V64, V69, V72-V74, V79
304 Occupant of motor vehicle involved in noncollision accident	V48, V58, V68, V78
305 Occupant of special-use motor vehicle involved in any accident	V83-V86
306 Other and unspecified motor vehicle accidents	V09.0, V09.2, V80.3-V80.5, V82.0-V82.1, V87.0-V87.5, V87.7-V87.8, V88.0-V88.5, V88.7-V88.8, V89.0, V89.2
307 Streetcar accidents	V82.2-V82.9
308 Other and unspecified land transport accidents	V01, V06, V09.1, V09.3, V09.9, V10-V11, V16-V18, V19.3, V19.8-V19.9, V80.0-V80.2, V80.7-V80.9, V87.9, V88.9, V89.1, V89.3, V89.9
309 Water transport accidents	V90-V94
310 Air and space transport accidents	V95-V97
311 Other and unspecified transport accidents and their sequelae	V98-V99, Y85
Falls	W00-W19
312 Fall on same level	W00-W09, W18
313 Fall from one level to another	W10-W17
314 Unspecified fall	W19
315 Accidental discharge of firearms	W32-W34
316 Accidental explosion	W39-W40
317 Accidental drowning and submersion	W65-W74
318 Accidental inhalation and ingestion of food or other objects causing obstruction of respiratory tract	W78-W80
319 Other accidental and unspecified threats to breathing	W75-W77, W81-W84
320 Accidental exposure to electric current	W85-W87
321 Accidental exposure to radiation	W88-W91

FIGURE 2 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
322 Accidental exposure to smoke, fire and flames	X00-X09
323 Accidental contact with heat and hot substances	X10-X19
324 Lightning	X33
325 Earthquake, volcanic eruption, avalanche, landslide and other earth movements	X34-X36
326 Cataclysmic storm and flood	X37-X38
Accidental poisoning and exposure to noxious substances	X40-X49
327 Accidental poisoning by and exposure to drugs and other biological substances	X40-X44
328 Accidental poisoning by and exposure to other and unspecified solid or liquid substances	X45-X46, X48-X49
329 Accidental poisoning by and exposure to other gases and vapors	X47
330 All other and unspecified accidents and their sequelae	W20-W31, W35-W38, W41-W64, W92-W99, X20-X32, X39, X50-X59, Y86
Intentional self-harm (suicide)	X60-X84, Y87.0
331 Intentional self-poisoning (suicide) by and exposure to drugs and other biological substances	X60-X64
332 Intentional self-poisoning (suicide) by and exposure to other and unspecified solid or liquid substances and their vapors	X65-X66, X68-X69
333 Intentional self-poisoning (suicide) by and exposure to other gases and vapors	X67
334 Intentional self-harm (suicide) by hanging, strangulation and suffocation	X70
335 Intentional self-harm (suicide) by discharge of firearms	X72-X74
336 Intentional self-harm (suicide) by jumping from a high place	X80
337 Intentional self-harm (suicide) by all other and unspecified means and their sequelae	X71, X75-X79, X81-X84, Y87.0
Assault (homicide)	X85-Y09, Y87.1
338 Assault (homicide) by drugs, biological substances and other and unspecified noxious substances	X85-X90
339 Assault (homicide) by hanging, strangulation and suffocation	X91
340 Assault (homicide) by discharge of firearms	X93-X95
341 Assault (homicide) by sharp object	X99
342 Assault (homicide) by blunt object	Y00
343 Assault (homicide) by bodily force	Y04
344 Sexual assault (homicide) by bodily force	Y05
345 Neglect, abandonment and other maltreatment syndromes	Y06-Y07
346 Assault (homicide) by all other and unspecified means and their sequelae	X92, X96-X98, Y01-Y03, Y08-Y09, Y87.1
347 Poisoning by and exposure to drugs and biological substances, undetermined intent	Y10-Y14
348 Poisoning by and exposure to other and unspecified solid or liquid substance, undetermined intent	Y15-Y16, Y18-Y19
349 Poisoning by and exposure to other gases and vapors, undetermined intent	Y17

Figure 2 (CONCLUDED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 358 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
350 Discharge of firearms, undetermined intent	Y22-Y24
351 Falling, jumping or pushed from a high place, undetermined intent	Y30
352 All other and unspecified events of undetermined intent and their sequelae	Y20-Y21, Y25-Y29, Y31-Y34, Y87.2, Y89.9
Legal intervention	Y35, Y89.0
353 Legal execution	Y35.5
354 Other legal intervention and their sequelae	Y35.0-Y35.4, Y35.6-Y35.7, Y89.0
355 Operations of war and their sequelae	Y36, Y89.1
Complications of medical and surgical care	Y40-Y84, Y88
356 Drugs, medicaments and biological substances causing adverse effects in therapeutic use, and their sequelae	Y40-Y59, Y88.0
357 Misadventures to patients during medical and surgical care and their sequelae	Y60-Y69, Y88.1
358 Other complications of medical and surgical care and their sequelae	Y70-Y84, Y88.2-Y88.3

Figure 3

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 113 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
All causes	
1# Salmonella infections	A01-A02
2# Shigellosis and amebiasis	A03, A06
3 Certain other intestinal infections	A04, A07-A09
# Tuberculosis	A16-A19
4 Respiratory tuberculosis	A16
5 Other tuberculosis	A17-A19
6# Whooping cough	A37
7# Scarlet fever and erysipelas	A38, A46
8# Meningococcal infection	A39
9# Septicemia	A40-A41
10# Syphilis	A50-A53
11# Acute poliomyelitis	A80
12# Arthropod-borne viral encephalitis	A83-A84, A85.2
13# Measles	B05
14# Viral hepatitis	B15-B19
15# Human immunodeficiency virus (HIV) disease	B20-B24
16# Malaria	B50-B54
17 Other and unspecified infectious and parasitic diseases and their sequelae	A00, A05, A20-A36, A42-A44, A48-A49, A54-A79, A81-A82, A85.0-A85.1, A85.8, A86-B04, B06-B09, B25-B49, B55-B99
# Malignant neoplasms	C00-C97
18 Malignant neoplasms of lip, oral cavity and pharynx	C00-C14
19 Malignant neoplasm of esophagus	C15
20 Malignant neoplasm of stomach	C16
21 Malignant neoplasms of colon, rectum and anus	C18-C21
22 Malignant neoplasms of liver and intrahepatic bile ducts	C22
23 Malignant neoplasm of pancreas	C25
24 Malignant neoplasm of larynx	C32
25 Malignant neoplasms of trachea, bronchus and lung	C33-C34
26 Malignant melanoma of skin	C43
27 Malignant neoplasm of breast	C50
28 Malignant neoplasm of cervix uteri	C53
29 Malignant neoplasms of corpus uteri and uterus, part unspecified	C54-C55
30 Malignant neoplasm of ovary	C56
31 Malignant neoplasm of prostate	C61
32 Malignant neoplasms of kidney and renal pelvis	C64-C65
33 Malignant neoplasm of bladder	C67
34 Malignant neoplasms of meninges, brain and other parts of central nervous system	C70-C72
Malignant neoplasms of lymphoid, hematopoietic and related tissue	C81-C96
35 Hodgkin's disease	C81
36 Non-Hodgkin's lymphoma	C82- C85

Figure 3 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 113 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
37 Leukemia	C91-C95
38 Multiple myeloma and immuno-proliferative neoplasms	C88, C90
39 Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue	C96
40 All other and unspecified malignant neoplasms	C17, C23-C24, C26-C31, C37-C41, C44-C49, C51-C52, C57-C60, C62-C63, C66, C68-C69, C73-C80, C97
41# In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior	D00-D48
42# Anemias	D50-D64
43# Diabetes mellitus	E10-E14
# Nutritional deficiencies	E40-E64
44 Malnutrition	E40-E46
45 Other nutritional deficiencies	E50-E64
46# Meningitis	G00,G03
47# Parkinson's disease	G20-G21
48# Alzheimer's disease	G30
Major cardiovascular diseases	I00-I78
# Diseases of heart	I00-I09, I11, I13, I20-I51
49 Acute rheumatic fever and chronic rheumatic heart diseases	I00-I09
50 Hypertensive heart disease	I11
51 Hypertensive heart and renal disease	I13
Ischemic heart diseases	I20-I25
52 Acute myocardial infarction	I21-I22
53 Other acute ischemic heart diseases	I24
Other forms of chronic ischemic heart disease	I20, I25
54 Atherosclerotic cardiovascular disease, so described	I25.0
55 All other forms of chronic ischemic heart disease	I20, I25.1-I25.9
Other heart diseases	I26-I51
56 Acute and subacute endocarditis	I33
57 Diseases of pericardium and acute myocarditis	I30-I31, I40
58 Heart failure	I50
59 All other forms of heart disease	I26-I28, I34-I38, I42-I49, I51
60# Essential (primary) hypertension and hypertensive renal disease	I10, I12
61# Cerebrovascular diseases	I60-I69
62# Atherosclerosis	I70
Other diseases of circulatory system	I71-I78
63# Aortic aneurysm and dissection	I71
64 Other diseases of arteries, arterioles and capillaries	I72-I78
65 Other disorders of circulatory system	I80-I99
# Influenza and pneumonia	J10-J18
66 Influenza	J10-J11
67 Pneumonia	J12-J18
Other acute lower respiratory infections	J20-J22
68# Acute bronchitis and bronchiolitis	J20-J21
69 Unspecified acute lower respiratory infection	J22

Figure 3 (CONTINED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 113 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
# Chronic lower respiratory diseases	J40-J47
70 Bronchitis, chronic and unspecified	J40-J42
71 Emphysema	J43
72 Asthma	J45-J46
73 Other chronic lower respiratory diseases	J44, J47
74# Pneumoconioses and chemical effects	J60-J66, J68
75# Pneumonitis due to solids and liquids	J69
76 Other diseases of respiratory system	J00-J06, J30-J39, J67, J70-J98
77# Peptic ulcer	K25-K28
78# Diseases of appendix	K35-K38
79# Hernia	K40-K46
# Chronic liver disease and cirrhosis	K70, K73-K74
80 Alcoholic liver disease	K70
81 Other chronic liver disease and cirrhosis	K73-K74
82# Cholelithiasis and other disorders of gallbladder	K80-K82
# Nephritis, nephrotic syndrome and nephrosis	N00-N07, N17-N19, N25-N27
83 Acute and rapidly progressive nephritic and nephrotic syndrome	N00-N01, N04
84 Chronic glomerulonephritis, nephritis and nephritis not specified as acute or chronic, and renal sclerosis unspecified	N02-N03, N05-N07, N26
85 Renal failure	N17-N19
86 Other disorders of kidney	N25, N27
87# Infections of kidney	N10-N12, N13 6, N15,1
88# Hyperplasia of prostate	N40
89# Inflammatory diseases of female pelvic organs	N70-N76
# Pregnancy, childbirth and the puerperium	O00-O99
90 Pregnancy with abortive outcome	O00-O07
91 Other complications of pregnancy, childbirth and the puerperium	O10-O99
92# Certain conditions originating in the perinatal period	P00-P96
93# Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99
94 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R99
95 All other diseases (Residual)	D65-E07, E15-E34, E65-F99, G04-G12, G23-G25, G31-H93, K00-K22, K29-K31, K50-K66, K71-K72, K75-K76, K83-M99, N13.9, N14, N15.0, N15.8-N15.9, N20-N23, N28-N39, N41-N64, N80-N98
# Accidents	V01-X59, Y85-Y86
Transport accidents	V01-V99, Y85
96 Motor vehicle accidents	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3- V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2

Figure 3 (CONCLUDED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 113 SELECTED CAUSES OF DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
97 Other land transport accidents	V01, V05-V06, V09.1, V09.3-V09.9, V10-V11, V15-V18, V19.3, V19.8-V19.9, 80.0-V80.2, V80.6-V80.9, V81.2-V81.9, V82.2-V82.9, V87.9, V88.9, V89.1, V89.3, V89.9
98 Water, air and space, and other and unspecified transport accidents and their sequelae	V90-V99, Y85
Nontransport accidents	W00-X59, Y86
99 Falls	W00-W19
100 Accidental discharge of firearms	W32-W34
101 Accidental drowning and submersion	W65-W74
102 Accidental exposure to smoke, fire and flames	X00-X09
103 Accidental poisoning and exposure to noxious substances	X40-X49
104 Other and unspecified nontransport accidents and their sequelae	W20-W31, W35-W64, W75-W99, X10-X39, X50-X59, Y86
# Intentional self-harm (suicide)	X60-X84, Y87.0
105 Intentional self-harm (suicide) by discharge of firearms	X72-X74
106 Intentional self-harm (suicide) by other and unspecified means and their sequelae	X60-X71, X75-X84, Y87.0
# Assault (homicide)	X85-Y09, Y87.1
107 Assault (homicide) by discharge of firearms	X93-X95
108 Assault (homicide) by other and unspecified means and their sequelae	X85-X92, X96-Y09, Y87.1
109# Legal intervention	Y35, Y89.0
Events of undetermined intent	Y10-Y34, Y87.2, Y89.9
110 Discharge of firearms, undetermined intent	Y22-Y24
111 Other and unspecified events of undetermined intent and their sequelae	Y10-Y21, Y25-Y34, Y87.2, Y89.9
112# Operations of war and their sequelae	Y36, Y89.1
113# Complications of medical and surgical care	Y40-Y84, Y88

Figure 4

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 130 SELECTED CAUSES OF INFANT DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
All causes	
Certain infectious and parasitic diseases	A00-B99
1 Certain intestinal infectious diseases	A00-A08
2# Diarrhea and gastroenteritis of presumed Infectious origin	A09
3# Tuberculosis	A16-A19
4# Tetanus	A33,A35
5# Diphtheria	A36
6# Whooping cough	A37
7# Meningococcal infection	A39
8# Septicemia	A40-A41
9# Congenital syphilis	A50
10# Gonococcal infection	A54
Viral diseases	A80-B34
11# Acute poliomyelitis	A80
12# Varicella (chickenpox)	B01
13# Measles	B05
14# Human immunodeficiency virus (HIV) disease	B20-B24
15# Mumps	B26
16 Other and unspecified viral diseases	A81-B00, B02-B04, B06-B19, B25, B27-B34
17# Candidiasis	B37
18# Malaria	B50-B54
19# Pneumocystosis	B59
20 Other and unspecified infectious and parasitic diseases and their sequelae	A20-A32, A38, A42-A49, A51-A53, A55-A79, B35-B36, B38-B49, B55-B58, B60- B99
Neoplasms	C00-D48
# Malignant neoplasms	C00-C97
21 Hodgkin's disease and non- Hodgkin's lymphomas	C81-C85
22 Leukemia	C91-C95
23 Other and unspecified malignant neoplasms	C00-C80,C88,C90,C96-C97
24# In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior	D00-D48
# Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	D50-D89
25 Anemias	D50-D64
26 Hemorrhagic conditions and other diseases of blood and blood-forming organs	D65-D76
27 Certain disorders involving the immune mechanism	D80-D89
Endocrine, nutritional and metabolic diseases	E00-E88
28# Short stature, not elsewhere classified	E34.3
29# Nutritional deficiencies	E40-E64
30# Cystic fibrosis	E84

Figure 4 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 130 SELECTED CAUSES OF INFANT DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
31# Volume depletion, disorders of fluid, electrolyte and acid-base balance	E86-E87
32 All other endocrine, nutritional and metabolic diseases	E00-E32, E34.0-E34.2, E34.4-E34.9, E65-E83, E85, E88
Diseases of the nervous system	G00-G98
33# Meningitis	G00, G03
34# Infantile spinal muscular atrophy, type I (Werdnig-Hoffman)	G12.0
35# Infantile cerebral palsy	G80
36# Anoxic brain damage, not elsewhere classified	G93.1
37 Other diseases of nervous system	G04, G06-G11, G12.1-G12.9, G20-G72, G81-G92, G93.0, G93.2-G93.9, G95-G98
38# Diseases of the ear and mastoid process	H60-H93
# Diseases of the circulatory system	I00-I99
39 Pulmonary heart disease and diseases of pulmonary circulation	I26-I28
40 Pericarditis, endocarditis and myocarditis	I30, I33, I40
41 Cardiomyopathy	I42
42 Cardiac arrest	I46
43 Cerebrovascular diseases	I60-I69
44 All other diseases of circulatory system	I00-I25, I31, I34-I38, I44-I45, I47-I51, I70-I99
Diseases of the respiratory system	J00-J98
45# Acute upper respiratory infections	J00-J06
# Influenza and pneumonia	J10-J18
46 Influenza	J10-J11
47 Pneumonia	J12-J18
48# Acute bronchitis and acute bronchiolitis	J20-J21
49# Bronchitis, chronic and unspecified	J40-J42
50# Asthma	J45-J46
51# Pneumonitis due to solids and liquids	J69
52 Other and unspecified diseases of respiratory system	J22, J30-J39, J43-J44, J47-J68, J70-J98
Diseases of the digestive system	K00-K92
53# Gastritis, duodenitis, and noninfective enteritis and colitis	K29, K50-K55
54# Hernia of abdominal cavity and intestinal obstruction without hernia	K40-K46, K56
55 All other and unspecified diseases of digestive system	K00-K28, K30-K38, K57-K92
Diseases of the genitourinary system	N00-N98
56# Renal failure and other disorders of kidney	N17-N19, N25, N27
57 Other and unspecified diseases of genitourinary system	N00-N15, N20-N23, N26, N28-N98
Certain conditions originating in the perinatal period	P00-P96
Newborn affected by maternal factors and by complications of pregnancy, labor and delivery	P00-P04
58# Newborn affected by maternal hypertensive disorders	P00.0
59# Newborn affected by other maternal conditions which may be unrelated to present pregnancy	P00.1-P00.9

Figure 4 (CONTINED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 130 SELECTED CAUSES OF INFANT DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
# Newborn affected by maternal complications of pregnancy	P01
60 Newborn affected by incompetent cervix	P01.0
61 Newborn affected by premature rupture of membranes	P01.1
62 Newborn affected by multiple pregnancy	P01.5
63 Newborn affected by other maternal complications of pregnancy	P01.2-P01.4, P01.6-P01.9
# Newborn affected by complications of placenta, cord and membranes	P02
64 Newborn affected by complications involving placenta	P02.0-P02.3
65 Newborn affected by complications involving cord	P02.4-P02.6
66 Newborn affected by chorioamnionitis	P02.7
67 Newborn affected by other and unspecified abnormalities of membranes	P02.8-P02.9
68# Newborn affected by other complications of labor and delivery	P03
69# Newborn affected by noxious influences transmitted via placenta or breast milk	P04
Disorders related to length of gestation and fetal malnutrition	P05-P08
70# Slow fetal growth and fetal malnutrition	P05
# Disorders related to short gestation and low birthweight, not elsewhere classified	P07
71 Extremely low birth weight or extreme immaturity	P07.0, P07.2
72 Other low birth weight or preterm	P07.1, P07.3
73# Disorders related to long gestation and high birth weight	P08
74# Birth trauma	P10-P15
# Intrauterine hypoxia and birth asphyxia	P20-P21
75 Intrauterine hypoxia	P20
76 Birth asphyxia	P21
77# Respiratory distress of newborn	P22
Other respiratory conditions originating in the perinatal period	P23-P28
78# Congenital pneumonia	P23
79# Neonatal aspiration syndromes	P24
80# Interstitial emphysema and related conditions originating in the perinatal period	P25
81# Pulmonary hemorrhage originating in the perinatal period	P26
82# Chronic respiratory disease originating in the perinatal period	P27
83# Atelectasis	P28.0-P28.1
84 All other respiratory conditions originating in the perinatal period	P28.2-P28.9
Infections specific to the perinatal period	P35-P39
85# Bacterial sepsis of newborn	P36
86# Omphalitis of newborn with or without mild hemorrhage	P38
87 All other infections specific to the perinatal period	P35, P37, P39
Hemorrhagic and hematological disorders of newborn	P50-P61
88# Neonatal hemorrhage	P50-P52, P54
89# Hemorrhagic disease of newborn	P53

Figure 4 (CONTINUED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 130 SELECTED CAUSES OF INFANT DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
90# Hemolytic disease of newborn due to isoimmunization and other perinatal jaundice	P55-P59
91# Hematological disorders	P60-P61
92# Syndrome of infant of a diabetic mother and neonatal diabetes mellitus	P70.0-P70.2
93# Necrotizing enterocolitis of newborn	P77
94# Hydrops fetalis not due to hemolytic disease	P83 2
95 Other perinatal conditions	P29, P70.3-P70.9, P71-P76, P78- P81, P83.0-P83.1, P83.3-P83.9, P90-P96
# Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99
96 Anencephaly and similar malformations	Q00
97 Congenital hydrocephalus	Q03
98 Spina bifida	Q05
99 Other congenital malformations of nervous system	Q01-Q02, Q04, Q06-Q07
100 Congenital malformations of heart	Q20-Q24
101 Other congenital malformations of circulatory system	Q25-Q28
102 Congenital malformations of respiratory system	Q30-Q34
103 Congenital malformations of digestive system	Q35-Q45
104 Congenital malformations of genitourinary system	Q50-Q64
105 Congenital malformations and deformations of musculoskeletal system, limbs and integument	Q65-Q85
106 Down's syndrome	Q90
107 Edward's syndrome	Q91.0-Q91.3
108 Patau's syndrome	Q91.4-Q91.7
109 Other congenital malformations and deformations	Q10-Q18, Q86-Q89
110 Other chromosomal abnormalities, not elsewhere classified	Q92-Q99
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R99
111# Sudden infant death syndrome	R95
112 Other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R53, R55-R94, R96-R99
113 All other diseases (Residual)	F01-F99, H00-H57, L00-M99
External causes of mortality	V01-Y89
# Accidents	V01-X59, Y85-Y86
Transport accidents	V01-V99, Y85
114 Motor vehicle accidents	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2

Figure 4 (CONCLUDED)

**INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES AND HEALTH-RELATED PROBLEMS
(ICD-10)
LIST OF 130 SELECTED CAUSES OF INFANT DEATH**

UNDERLYING CAUSE OF DEATH	ICD-10 CODE(S)
115 Other and unspecified transport accidents and their sequelae	V01, V05-V06, V09.1, V09.3-V09.9, V10-V11, V15-V18, V19.3, V19.8-V19.9, V80.0-V80.2, V80.6-V80.9, V81.2-V81.9, V82.2-V82.9, V87.9, V88.9, V89.1, V89.3, V89.9, V90-V99, Y85
116 Falls	W00-W19
117 Accidental discharge of firearms	W32-W34
118 Accidental drowning and submersion	W65-W74
119 Accidental suffocation and strangulation in bed	W75
120 Other accidental suffocation and strangulation	W76-W77, W81-W84
121 Accidental inhalation and ingestion of food or other objects causing obstruction of respiratory tract	W78-W80
122 Accidents caused by exposure to smoke, fire and flames	X00-X09
123 Accidental poisoning and exposure to noxious substances	X40-X49
124 Other and unspecified accidents and their sequelae	W20-W31, W35-W64, W85-W99, X10-X39, X50-X59, Y86
# Assault (homicide)	X85-Y09, Y87.1
125 Assault (homicide) by hanging, strangulation and suffocation	X91
126 Assault (homicide) by discharge of firearms	X93-X95
127 Neglect, abandonment and other maltreatment syndromes	Y06-Y07
128 Assault (homicide) by other and unspecified means and their sequelae	X85-X90, X92, X96-X99, Y00-Y05, Y08-Y09, Y87.1
129# Complications of medical and surgical care	Y40-Y84, Y88
130 Other external causes and their sequelae	X60-X84, Y10-Y36, Y87 0, Y87 2, Y89
122 Accidents caused by exposure to smoke, fire and flames	X00-X09
123 Accidental poisoning and exposure to noxious substances	X40-X49
124 Other and unspecified accidents and their sequelae	W20-W31, W35-W64, W85-W99, X10-X39, X50-X59, Y86
# Assault (homicide)	X85-Y09, Y87.1
125 Assault (homicide) by hanging, strangulation and suffocation	X91
126 Assault (homicide) by discharge of firearms	X93-X95
127 Neglect, abandonment and other maltreatment syndromes	Y06-Y07
128 Assault (homicide) by other and unspecified means and their sequelae	X85-X90, X92, X96-X99, Y00-Y05, Y08-Y09, Y87.1
129# Complications of medical and surgical care	Y40-Y84, Y88
130 Other external causes and their sequelae	X60-X84, Y10-Y36, Y87 0, Y87 2, Y89

USE OF RATES AND RATIOS

It is sometimes quite useful to adjust a rate or ratio for factors in the population that may affect the measurement. For instance, mortality rates, expressed as numbers of deaths per 1,000 or 100,000 resident population, can be adjusted to account for the effects of demographic factors that might affect mortality, such as race or age composition of the population. Where such adjustments have been made in this report, that fact is indicated in the title or footnote of the table or graph.

However, most reference tables in this report present rates and ratios that have not been adjusted to account for such factors. In such "crude" rates, the denominator is the estimated state or county population, divided by 1,000 or 100,000, and the numerator is the number of events, not weighted by any factor to adjust for the composition of the population. Examples of crude rates are given in the DEFINITIONS section below.

DEFINITIONS

This section provides definitions of selected demographic, statistical, and medical terms as they are used in this publication. The terms are listed in alphabetical order. Cause of death, race, marital status, and population estimates, discussed elsewhere in the TECHNICAL OVERVIEW SECTION, are not included here.

ABORTION - the spontaneous or induced termination of a pregnancy, without live birth.

ABORTION RATIO - the number of induced abortions reported to the OVS, compared to the number of live births. It is calculated as follows:

$$\text{Abortion ratio} = \frac{\text{Number of induced abortions}}{\text{Number of live births}} \times 1,000$$

AGE - the calculated or reported age of the person(s) involved in a vital or reportable event. For fetal deaths, parents' reported ages were used. For births, induced abortions, marriages, divorces, and reportable cancers, age was calculated based on reported date of birth and date of the event. For deaths, age was calculated as the number of days between birth and death dates. Age in days was divided by 365.25 and truncated to yield age in years if the decedent was one year old or older. Where the record of the month and day of birth were incomplete or invalid, the month was assumed to be June and the day was assumed to be the 15th for the calculation of age in years.

AGE-ADJUSTED DEATH RATE - an index number that represents the crude death rate that would occur if the observed age-specific death rates were present in a population with an age distribution identical to that of a standard population. It is derived from several age-specific death rates and used to compare relative mortality risks from one group to another (including comparisons of the resident populations of a single geographic region at different times). Statistically, it is a weighted average of the age-specific rates, with the weights representing the proportionate distribution of age in a hypothetical population. It is possible to adjust death rates for other demographic variables that might influence mortality, such as race, sex, or ancestry. (See AGE-SPECIFIC DEATH RATE below and AGE-ADJUSTED DEATH RATES in the MORTALITY section of the report for more discussion.) It is

calculated in this report by the direct method, using the 2000 U.S. population as the standard population, as follows:

$$\text{Age-adjusted death rate} = \sum_{i=1}^{11} S_i w_i$$

where S_i = the age-specific death rate for the i^{th} age group

where w_i = the weight of the i^{th} age group in the standard population

AGE-SPECIFIC DEATH RATE – the proportion of deaths in a specific age group, expressed as a number per thousand persons in that age group. The “standard 11” age groups are typically used: 0 years of age, 1 – 4 years of age, 5 – 14, 15 – 24, ... , 75 – 84, and 85 years of age or older. It is calculated as follows:

$$\text{Age specific death rate} = \frac{\text{Number of deaths within the age group}}{\text{Midyear population of the age group}} \times 1,000$$

APGAR SCORE - an evaluation of a newborn infant’s physical status that assigns numerical values (0-2) to each of five criteria 1) heart rate, 2) respiratory effort, 3) muscle tone, 4) response stimulation, and 5) skin color; a score of eight to ten indicates the best possible condition.

AT-RISK POPULATION - all of the persons to whom a given event could occur. The at-risk or “~~subject~~” population is the denominator in a rate calculation. (See the use of “at risk” in the definition of FERTILITY RATE).

BIRTH RATE - the proportion of live births in the total population, expressed as a number per thousand persons in that population. Unless otherwise stated, the birth rate is the annual, crude rate, unadjusted for factors affecting the population. It is calculated as follows:

$$\text{Crude birth rate} = \frac{\text{Number of live births}}{\text{Midyear population}} \times 1,000$$

COUNTY - as used in table titles, either an incorporated county or that part of Yellowstone National Park which is located in Montana. For example, a tabulation of deaths “by county of occurrence” would show deaths in the Montana portion of Yellowstone National Park as “county” occurrences.

DEATH RATE - the proportion of deaths in the total population, expressed as a number per thousand population. Unless otherwise stated, the death rate is the annual crude rate, unadjusted for factors affecting the population. It is calculated as follows:

$$\text{Crude death rate} = \frac{\text{Number of deaths}}{\text{Midyear population}} \times 1,000$$

EXTREMELY LOW BIRTHWEIGHT - the birthweight of an infant of less than 1,000 grams (about 2 pounds 3.25 ounces).

FERTILITY RATE - the total number of live births as a proportion of the estimated female population at risk, expressed as a number per thousand women in that population. The population at risk of experiencing a birth is all fertile women. The approximation used is all women in the main childbearing ages (15 to 44 years). It is calculated as follows:

$$\text{Fertility rate} = \frac{\text{Number of live births}}{\text{Midyear population of women aged 15 – 44}} \times 1,000$$

FETAL DEATH - the reported birth of a fetus that shows no evidence of life after complete birth-that is, no action of the heart, breathing, or movement of voluntary muscles. Montana law requires report of fetal death if the fetus weighed 350 grams or more or, if the weight is unknown, the delivery took place after 20 weeks of gestation. There is no provision in Montana law for reporting the birth of a non-viable fetus with a lower weight.

FETAL MORTALITY RATIO - the number of fetal deaths as compared to the number of live births expressed as a number per thousand live births. It is calculated as follows:

$$\text{Fetal mortality ratio} = \frac{\text{Number of fetal deaths}}{\text{Number of live births}} \times 1,000$$

FREQUENCY - the number of occurrences of an event or observation; how often an event occurs.

ICD - the International Classification of Diseases code used to classify and report causes of death in vital statistics. This code is revised periodically. The current revision is called the International Statistical Classification of Diseases, Injuries, and Related Health Problems, Tenth Revision, and is published by the World Health Organization. In this report, the code is referred to as ICD-10. (See the “Cause of Death Certification” and “Cause of Death and Conversion to ICD-10” sections of this report for further details).

INCIDENCE RATE - the number of new occurrences of an event within a population during a stated time period for a given number of persons in that population. The time period is assumed to be annual unless otherwise stated. The incidence rate for reportable diseases is expressed as the number of new cases per 100,000 population.

INDUCED ABORTION - a legal, medical or surgical procedure that is intended to terminate a pregnancy without live birth.

INFANT - an individual less than 365 days (one year) old.

INFANT MORTALITY RATE - the number of infant deaths compared to the number of live births in that same period, expressed as a number per thousand live births. It is calculated as follows:

$$\text{Infant mortality rate} = \frac{\text{Number of infant deaths}}{\text{Number of live births}} \times 1,000$$

INVALID MARRIAGE - a marriage deemed never to have been legal; a declaration of invalid marriage was formerly called an annulment.

LIVE BIRTH - the birth of a child who shows evidence of life after complete birth. Evidence of life includes heart action, breathing, or movement of voluntary muscles.

LOW BIRTH WEIGHT - the birth weight for a live-born infant of less than 2,500 grams (about five pounds, eight ounces).

MARITAL DISSOLUTION - legal termination of a valid marriage; a marital dissolution was formerly called a divorce.

MATERNAL DEATH - a woman's death attributable to childbirth or complications of pregnancy, delivery, and the puerperium.

MATERNAL MORTALITY RATE - the total number of maternal deaths as a proportion of total live births, expressed as a number per hundred thousand live births. It is calculated as follows:

$$\text{Maternal mortality rate} = \frac{\text{Number of maternal deaths}}{\text{Number of live births}} \times 100,000$$

MEAN - the arithmetic average, obtained by dividing the sum of individual values or scores by the number of values or scores observed. For example, the mean age for six persons aged 9, 10, 12, 13, 13, and 16 is 73 divided by 6, or 12.2 years.

MEDIAN - the midpoint; for our purposes, given a set with an odd number of values, the median is the middle value when arranged in numerical order. For a set with an even number of values, the median is the mean of the two "middle" values. For the example under the definition of MEAN, the median age is 12.5 years.

MODE - the most frequently observed value in a set of values. For the example under the definition of MEAN, the modal age is 13.

NATURAL INCREASE - the excess of births over deaths among residents of an area.

NEONATAL DEATH - a death occurring within the first 27 days of life.

NEOPLASM - a new, abnormal, malignant, or benign growth of tissue that is uncontrolled and progressive. Malignant neoplasms are commonly called cancers.

OUT-OF-WEDLOCK BIRTH RATIO - the number of births to unmarried women as compared to the number of live births, expressed as a number per thousand live births. It is calculated as follows:

$$\text{Out - of - wedlock birth ratio} = \frac{\text{Number of live out - of - wedlock births}}{\text{Number of livebirths}} \times 1,000$$

PARITY - the condition of a woman with respect to her having borne viable offspring. The parity of this birth is the number of live children the woman has borne, including those born in the current delivery.

PERCENTILE - (as in xxth percentile) a statistic used to further describe the dispersion of a set of values. One-quarter of the values in a set are less than or equal to the value of the 25th percentile; one-half are less than or equal to the 50th percentile (or median); etc. The 25th and 75th percentiles are found by counting out to the first quarter and three quarter of the values, respectively. When this count lands between two values in the list, averages can be taken, although any number between the two would suffice. For the example under the definition of MEAN, the 25th percentile is 11 and the 75th percentile is 13.

PERINATAL DEATH - a death occurring near the time of birth. The number of perinatal deaths is the sum of registered fetal deaths and neonatal deaths.

PERINATAL MORTALITY RATE - the number of fetal deaths plus neonatal deaths as compared to the number of deliveries (fetal deaths plus live births), expressed as a number per thousand persons in that population. It is calculated as follows:

$$\text{Perinatal mortality rate} = \frac{\text{Number of fetal deaths} + \text{neonatal deaths}}{\text{Number of fetal deaths} + \text{live births}} \times 1,000$$

PLACE OF OCCURRENCE - the location where an event took place, regardless of the usual residence of the person(s) involved.

PLACE OF RESIDENCE - the usual residence of the person(s) involved in a vital event, regardless of the event's place of occurrence. For births and fetal deaths, the mother's usual place of residence. For induced abortions, the usual place of residence of the patient. For deaths, the usual place of residence of the decedent.

PLURALITY - the number of infants born during this delivery.

POST-NEONATAL DEATH - during the first year of life, but after the first 27 days.

PUERPERIUM - the condition of the mother immediately following childbirth.

RATE - the frequency of an event in a population subject to that event, expressed as the frequency of occurrence per unit--generally 1,000 or 100,000--of the subject population. For example, the Montana resident birth rate per 1,000 population is the number of births to Montana resident women for every 1,000 men, women, and children in the Montana population.

RATIO - the comparison of two types of events occurring in a subject population, expressed as a frequency of occurrence per unit of one of the events. For instance, the Montana fetal mortality ratio is the number of fetal deaths per 1,000 live births to Montana resident women. The population, fertile women residing in Montana, is the same for both events, but the events are unlikely to have happened to the same women. Also, the total number of fertile women is not part of the calculation; the basis for the unit (the denominator) is live births, one of the events.

STAGE AT DIAGNOSIS -The extent to which a cancer has spread when it is first diagnosed. Summary stages for cancer diagnoses are:

In-Situ - An abnormal cell growth that meets the criteria for malignancy but does not invade the basement membrane of the organ involved.

Local - A cancer that is limited to the site of origin. It has not spread beyond the organ.

Regional - A cancer that extends to adjacent organs and/or regional lymph nodes, and appears to have spread no further.

Distant - A cancer that extends beyond adjacent organs and has spread to a distant site or distant lymph node.

Unknown - A cancer for which there is insufficient information available to determine the stage at diagnosis.

STANDARD DEVIATION - a measure of how “spread out” a set of values is, on average, from its mean. A small standard deviation indicates that, on average, the values are tightly grouped around the mean while a large standard deviation indicates that, on average, the values are scattered widely. For the series of values presented for the definition of MEAN, the standard deviation is 2.27. For a set of N values, it is computed as follows:

$$\text{Standard deviation} = \sqrt{\frac{1}{N} \sum_{i=1}^N (x_i - \mathbf{m})^2}$$

where \mathbf{m} = the mean of the set of N values

where x_i = the i^{th} value in the set of N values

SUBJECT POPULATION - see AT-RISK POPULATION.

SURVIVAL RATE - the percentage of people diagnosed with a life-threatening disease and remaining alive as of a stated time period after diagnosis.

THERAPIES - procedures used to treat cancer or other health conditions. The following are therapies for reportable cancers:

Biological Response Modifiers (BRM) Therapy - administration of a chemical that alters the patient's immune system to destroy cancer growth.

Chemotherapy - administration of a drug to destroy cancer cells.

Hormone Therapy - administration of a hormone or steroid drug that destroys cancer by changing the hormone balance of the patient.

Radiation - the transmission of light, short radio waves, ultraviolet light, or x-rays to destroy cancer cells. Radiation may reduce the size, destroy the cancer, or stop growth of the cancer.

Surgery - a partial or total removal of a primary cancer or a metastatic cancer.

VERY LOW BIRTHWEIGHT - the birthweight of an infant of less than 1,500 grams (about 3 pounds 5 ounces).

YEARS OF POTENTIAL LIFE LOST (YPLL) - A measure of the cost of premature deaths that emphasizes deaths of the young by measuring the number of years lost to death before a given age, 75 years in this report. Statistically, YPLL is the difference between a given age and the decedent's age at death, summed for all decedents younger than the given age.